IN THE CLAIMS

Claim 1. (Currently Amended) A method of routing on a sensor network, the method comprising the steps of:

receiving by a sensor a distance calculation message containing message distance information indicative of a number of hops to a collector node; and

comparing the message distance information with current sensor distance information to obtain a distance result;

wherein the distance message contains key information indicative of sensors on the network that have broadcast the distance message prior to reception by the sensor.

Claim 2. (Original) The method of claim 1, wherein if the distance result indicates that the current sensor distance is farther than the message distance information, the method further comprising the step of updating the current sensor distance information with the message distance information.

Claim 3. (Canceled)

Claim 4. (Currently Amended) The method of claim 1 ~~claim 3~~, further comprising the step of extracting the key information from the distance message.

Claim 5. (Currently Amended) The method of claim 1 ~~claim 3~~, wherein the key information is a non-unique value associated with the sensors on the network.

Claim 6. (Currently Amended) The method of claim 1 ~~claim 3~~, wherein the distance message contains traffic condition information indicative of traffic conditions at the sensors on the network.

Claim 7. (Original) The method of claim 6, wherein the traffic conditions at the sensors may be used to select a preferential path through the network.

Claim 8. (Original) The method of claim 2, further comprising the steps of creating an updated distance message containing increased message distance information; and broadcasting the updated distance message.

Claim 9. (Original) The method of claim 8, further comprising establishing sensor key information associated with the sensor and including the sensor key information in the updated distance message.

Claim 10. (Original) The method of claim 1, wherein if the distance result indicates that the current sensor distance is the same as the message distance information, the method further comprising the steps of creating an updated distance message containing increased message distance information; and broadcasting the updated distance message.

Claim 11. (Original) The method of claim 1, wherein if the distance result indicates that the current sensor distance is the same as the message distance information, the method further comprising the steps of not rebroadcasting the updated distance message.

Claim 12. (Original) The method of claim 1, further comprising the step of periodically increasing the current sensor distance information.

Claim 13. (Currently Amended) ~~The method of claim 1, further comprising the steps of~~ A method of routing on a sensor network, the method comprising the steps of:

receiving, by a sensor, a distance calculation message containing message distance information indicative of a number of hops to a collector node;

using the message distance information to set a current sensor distance of the sensor from the sensor to the collector node;

receiving a data message by the sensor from another sensor on the sensor network; and

selectively rebroadcasting the data message if a distance value in the data message is equal to or less than the current sensor distance.

Claim 14. (Currently Amended) ~~The method of claim 1, further comprising the steps of~~ A method of routing on a sensor network, the method comprising the steps of:

receiving, by a sensor, a distance calculation message containing message distance information indicative of a number of hops to a collector node;

comparing the message distance information with current sensor distance information to obtain a distance result; and

comparing the message distance information with a drop value.

Claim 15. (Original) The method of claim 14, wherein the drop value is independent of the current sensor distance and the distance value in the data message.

Claim 16. (Original) The method of claim 14, wherein the distance calculation message further comprises reflection prevention information.

Claim 17. (Original) The method of claim 16, wherein the reflection prevention information is a message identifier.

Claim 18. (Original) The method of claim 1, wherein the distance calculation message further contains collector identification information associated with an identity of a collector associated with the distance calculation message.

Claim 19. (Original) The method of claim 18, wherein the collector identification information is a key information that is not unique on the network.

Claim 20. (Original) The method of claim 18, wherein the distance calculation message further contains a collector load indicator.

Claims 21-25. (Canceled)

Claim 26. (New) The method of claim 13, wherein the step of selectively rebroadcasting the data message comprises comparing key information in the data message with key information

associated with the sensor, and only rebroadcasting the data message if the data message contains matching key information.

Claim 27. (New) The method of claim 26, wherein the key information associated with the sensor is not unique on the network.